**IN THE UNITED STATES DISTRICT COURT**
**FOR THE EASTERN DISTRICT OF TEXAS**
**MARSHALL DIVISION**

| | |
|---|---|
| PHENIX LONGHORN LLC,<br><br>Plaintiff,<br><br>v.<br><br>AU OPTRONICS CORPORATION, HISENSE ELECTRONICA MEXICO, S.A. DE C.V., HISENSE USA CORPORATION, HISENSE VISUAL TECHNOLOGY CO., LTD., and DOES 1–10,<br><br>Defendants. | **CIVIL CASE NO. 2:23-cv-00477-RWS-RSP**<br><br>**JURY TRIAL DEMANDED** |
| PHENIX LONGHORN LLC,<br><br>Plaintiff,<br><br>v.<br><br>INNOLUX CORPORATION and DOES 1–10,<br><br>Defendants. | **CIVIL CASE NO. 2:23-cv-00478-RWS-RSP**<br><br>**JURY TRIAL DEMANDED** |

# DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Gamma correction is used to adjust the brightness of an image to reflect how light is perceived by humans. Phenix, of course, did not invent gamma correction, and automating that process using integrated circuits (ICs) is not a new concept. Its two asserted patents—U.S. Patent Nos. 7,233,305 and 7,557,788—are directed to a gamma reference voltage generator. The only embodiments in each patent claim an ***analog*** solution to an "'***analog*'** problem," describing an IC that stores ***analog*** voltages in ***analog*** memory and outputs those ***analog*** voltages for gamma correction. The patent refers to ***analog*** components no less than 34 times in the specification.

The only mention of "digital" in the specification is to disparage such embodiments. That's because digital solutions would require additional components and thus teach away from the patents' purported advantages: to reduce complexity, maintain precision, "allow for a smaller and thinner physical size," and lower power consumption at an "acceptable cost." *See* '305 patent at 2:10-12, 2:29-35, 4:4-6. Phenix's expansive reading of the patents would ensnare digital solutions that are neither described nor enabled and should be rejected.

Moreover, asserted claim 1 of the '788 patent should be deemed indefinite under 35 U.S.C. § 112 because it includes multiple means-plus-function terms that lack sufficient corresponding structure for performing the functions required by the claim. For example, neither Phenix nor its expert have identified a corresponding algorithm for the claim limitation that recites "means for executing a predetermined algorithm," rendering the term indefinite for lack of corresponding structure and further rendering the term "predetermined algorithm" indefinite.

Phenix also asks the Court to adopt certain claim constructions based on a 2019 claim construction order in *Phenix v. Wistron*, relying on *TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014), arguing that the *Wistron* order should be accorded substantial weight. But in *TQP*, this Court actually departed from prior constructions to

address "ongoing confusion and disputes." *Id.* It should also do so here. "[W]here . . . defendants have had no chance to litigate their claims, . . . an adoption of claims construed without Defendants' participation could cause an injustice of precisely the sort that due process seeks to avoid." *Tex. Instr., Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 589-90 (E.D. Tex. 2002). Phenix's proposed constructions have no basis in the specification, teach away from the focus of the patents, and are not supported by expert testimony. Given the dispute over claim scope and the patents' limited teachings, the Court should decline to give Phenix broad license to recapture the digital solutions that its patents have fundamentally disavowed.

## I. OVERVIEW OF THE RELEVANT TECHNOLOGY

The '305 patent addresses gamma correction for liquid crystal displays, a field where multiple prior art approaches existed before the claimed invention. The patent identifies prior art select-on-test resistors as "the least expensive solution to this problem," but notes that they can present "a major production problem," because they require too much manual labor to test and could not be changed easily to meet customer demands. '305 patent at 1:28-41. The '305 patent also discusses prior art digital solutions—"potentiometers, Electrically Erasable Potentiometers (E2POTS), digitally-controlled potentiometers (DCPs) and Digital to Analog Converters (DACs)"—that may improve on select-on-test resistors but impose a "cost [that] is unacceptable." *Id*. at 1:39-45. The patent further describes other "quite complex digital approaches to this 'analog' problem" that are consequently "quite expensive." *Id*. at 2:4-12. The '305 patent thus purports to provide an IC with "a gamma reference architecture that automates gamma adjustment and provides reprogrammable capability and achieves acceptable cost" to solve this "analog" problem. *Id.* at 2:7-12, 3:48-4:21. By storing analog voltages in analog memory cells and outputting those analog voltages for gamma correction, the '305 patent purports to achieve high accuracy by generating programming pulses adjusted for "key variables" (*i.e.*, "programming voltage

amplitude, rise and fall time of the pulse, and pulse duration"). *Id.* at 5:40-43, 6:22-67, 7:48-49. "In the preferred embodiment, the present invention allows automated assembly of an entire PC board, automated test and gamma adjustment, smaller and thinner physical size, lower power consumption, reprogrammable and non-volatile settings." *Id.* at 2:29-35.

## II. THE '305 PATENT

### A. "non-volatile storage cells"

| Phenix's Proposal | AUO's Proposal[1] | Innolux's Proposal |
|---|---|---|
| memory cells which retain stored data even when power is removed | Analog memory cells which retain stored data even when power is removed | Analog memory cells which retain stored data even when power is removed |

The dispute over "non-volatile storage cells" concerns whether the term is limited to analog applications or whether it should extend beyond the teachings of the '305 patent to cover both analog and digital memory cells. Here, Phenix has disavowed such digital solutions because the plain disclosure of the '305 patent, the focus of the invention, and the only embodiments are directed to finding an ***analog*** solution to an "'***analog***' problem" with ***analog*** memory cells, and because the '305 patent teaches away from a digital solution.

In *Techtronic Indus. Co. v. ITC*, 944 F.3d 901, 906-10 (Fed. Cir. 2019), the Federal Circuit held that disavowal need not be explicit and may be inferred when a disavowed feature is not described in the patent's "sole embodiment" and is disparaged by the patent's description of the prior art. There, the Court found the patent disavowed garage door openers with wall consoles that do not have passive infrared detectors based on a "consistent description of the invention as a wall console with a passive infrared detector—a feature included in the sole embodiment—and the patent's disparagement of prior art garage door openers that placed the detector in the head unit." *Id.* The patent holder argued such disclosures "fall short of disavowal" because the patent did not

[1] Reference to AUO's Proposal refers to constructions from both AUO and Hisense.

state that an alternative embodiment was "impossible or even infeasible." *Id.* But where the "consiste[nt] represent[ations]" and "entire specification" focus on a specific embodiment "responsive to the prior art deficiency . . . as set forth as the objective of the invention," it is "unnecessary [to] also concede that those embodiments are infeasible or . . . impossible." *Id*. at 909.

Similarly, in *In re Power Integrations, Inc.*, the Federal Circuit held it is improper to read a term expansively to include extra components when "every embodiment" excludes such components. 884 F.3d 1370, 1375-77 (Fed. Cir. 2018). The Court noted that, though the "inclusion of [a] bulky [extra component] between the counter and the digital to analog converter" was not expressly excluded, "it is inconsistent with the . . . patent's focus on minimizing circuit size" to create a "compact and inexpensive" system. *Id.* The "correct inquiry" is not whether the specification "precludes some broad reading of the claim term," but whether the meaning corresponds with . . . "how the inventor describes his invention in the specification." *Id.* at 1377.

As in *Techtronic* and *Power Integrations*, disavowal of digital memory cells should be inferred because the patent's ***only embodiments*** exclusively describe analog forms of non-volatile storage cells and the patent ***teaches away*** from using digital memory. *See* Ex. E (Silzars Decl.) ¶¶ 156, 159-61; Ex. D (Min. Decl.) ¶¶ 29-32; Ex. H (Silzars Dep. Tr.) at 79:20-25, 81:14-23. As Dr. Min explained, the "functional requirements . . . claimed appear to necessitate [an analog] interpretation." Ex. D ¶ 29. While claims are not limited to their preferred embodiments, it is clear there is "'nothing in the [specification] to indicate that the patentee contemplated any alternative" embodiment to the one presented." *Snow v. Lake Shore & M.S. Ry. Co.*, 121 U.S. 617, 630 (1887).

Phenix relies on *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004) to argue that claims should not be limited to the sole embodiments disclosed in a specification. Br. 7, 14. But Phenix quotes passages in *Liebel* that rely on *Tex. Digital Sys., Inc. v. Telegenix, Inc.*,

308 F.3d 1193, 1202 (Fed. Cir. 2002), which was largely abrogated by *Phillips*, 415 F.3d 1303 (Fed. Cir. 2005) because it improperly restricted the role of the specification in claim construction. As *Phillips* held, claim construction must "capture the scope of the actual invention." *Id.* at 1323-24. Whether "the embodiments . . . define the outer limits of the claim term," or are "merely . . . exemplary," is a question that must be determined "in the context of the particular patent." *Id.*

Here, Phenix cannot cite a single passage teaching digital storage cells as part of the claimed invention, offers no expert testimony from a POSA, and relies solely on attorney argument to argue that the particular "non-volatile storage cells" can include digital memory cells that are not disclosed and are not enabled. As in *Techtronic* and *Power Integrations*, an explicit disavowal is not necessary and can be inferred because the '305 patent teaches away from using digital memory, calling it "complex," "quite expensive," and "unacceptabl[y] cost[ly]." '305 patent at 1:39-2:12. While Defendants need not show that a digital solution would be "impossible or infeasible" (*see Techtronic*, 944 F.3d at 906), a POSA would understand that the specification neither describes nor enables digital storage cells because doing so would capture a fundamentally different invention.[2] Replacing analog cells with digital cells would result in "a nonoperating device" that "cannot represent grayscale" and "could only turn the display fully on or fully off." Ex. H at 80:23-81:2; Ex. I (Min Dep. Tr.) at 37:13-38:5. To enable a digital solution, it would be

[2] *Auto. Techs. Int'l, Inc. v. BMW of N. Am., Inc.*, 501 F.3d 1274, 1285 (Fed. Cir. 2007) (rejecting "distinctly different" embodiments where specification must enable full scope of claims); *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008) (requiring broad claims be "fully enabled"); *X2Y Attenuators, LLC v. ITC*, 757 F.3d 1358, 1362 (Fed. Cir. 2014) (limiting claims to an embodiment); *Secure Web Conference Corp. v. Microsoft Corp.*, 640 F. App'x 910, 914-15 (Fed. Cir. 2016) (limiting term where "[a]ll descriptions of the security device in the intrinsic record are limited to a stand-alone device" and the specification "never once suggests embedding the security device within the microprocessor-based device"); *Ruckus Wireless, Inc. v. Innovative Wireless Solns., LLC*, 824 F.3d 999, 1002 (Fed. Cir. 2016) (limiting "communications path" to wired communications because "the specification makes no mention of wireless communications" and would thus lack written description).

necessary to incorporate numerous components including two converters (digital-to-analog and analog-to-digital) and other structural elements[3]—none of which are taught in the '305 patent. Ex. H at 80:1-81:3; Ex. I at 38:24-39:10. As in *Power Integrations*, adding extra components would be inconsistent with the '305 patent's focus on an "analog solution" that has an "acceptable cost" and minimizes complexity. '305 patent at 1:39-2:12; Ex. E ¶¶ 157, 161; Ex. H at 80:1-81:3; Ex. D ¶ 40; Ex. I at 36:23-38:6, 55:16-56:15.

Furthermore, the Federal Circuit held that when a feature is inconsistent with the advantages and descriptions of "the present invention," such disclaimers can constitute "clear and unmistakable statements limiting the scope of the claims." *Campbell Soup Co. v. Gamon Plus, Inc.*, No. 2020-2322, 2021 WL 3671366, at *4-5 (Fed. Cir. 2021). Here, the specification explicitly states that "***the present invention*** advantageously allows a stand-alone solution such that it is not necessary to incorporate a micro controller unit (MCU)." '305 patent at 2:33-35 (emphasis added). This indicates the present invention is designed to obviate the need for additional, bulky, or costly components like microcontroller units (which would likely be required to control a more complicated digital solution), limiting the claimed invention to the disclosed analog embodiments that do not require such components. *See id.* at 2:29-34. Moreover, a POSITA would understand that the "unacceptable" cost of alternative devices like analog-to-digital converters and digital-to-analog converters reinforces that the "stand-alone solution" of "***the present invention***" is designed to avoid such additional components. *See also id*. at 1:39-45. "Non-volatile storage cells" should be construed as "analog memory cells which retain stored data even when power is removed."

**B. "connected to" and "coupled to"**

[3] If one were to replace an analog cell with a digital cell, "for every analog cell, we would have to replace it with 10 digital cells… to get the 10-bit accuracy that [1024] levels represent." Ex. H at 80:4-9.

| Term | Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|---|
| "connected to" | plain and ordinary meaning | directly linked or joined | directly linked or joined. |
| "coupled to" | plain and ordinary meaning | indirectly or directly linked or joined | indirectly or directly linked or joined |

In the context of claim 1, "connected to" means directly linked or joined, while "coupled to" may encompass indirect and direct links. *See ICM Controls Corp. v. Honeywell Int'l, Inc.*, 256 F. Supp. 3d 173, 200-02 (N.D.N.Y. 2017) (in an electronic arts patent, construing "connected" to require a direct connection, while "coupled" does not, and finding that allowing "connected" to include indirect connections would dramatically expand the scope of the claims beyond the structure discussed in the specification).

Construing these terms is necessary to assist the jury (who might otherwise apply the two terms to have the same meaning) and obviate a potential *O2 Micro* issue: whether extra electronic components may be interposed between two "connected" elements.[4] *See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). As Dr. Min testified, a POSA would understand "drivers connected to said storage cells and to the plurality of outputs" to be a direct connection. Ex. D ¶ 47. In ICs like those generating gamma reference voltages, drivers take an input signal and provide it with appropriate power, current, or buffering to drive subsequent circuitry. *Id*. Similarly, "drivers connected to said storage cells" and "plurality of inputs connected to said multiplexer" describe direct connections between those electronic components. *Id*. Ex. I at 39:13-17. In contrast, a POSA would understand "circuits for programming coupled to a multiplexer" to suggest a broader functional relationship. Ex. D ¶ 48. This distinction is significant because such circuits and multiplexers may interact through intermediate elements or shared

[4] *See, e.g., Holmberg v. U.S.,* 124 Fed. Cl. 610, 619 (2016) (holding that three claim terms should be given their plain and ordinary meanings, but because of the presumption that "different terms have different meanings," construing the three terms to have expressly different meanings).

connections and thus may work without a direct wire-to-wire connection. *Id.*; *id.* ¶¶ 51, 54 (describing how Fig. 3 shows programming engine 310 interfacing with the mux through multiple signal paths and intermediate components and not through a simple direct connection).

In *Arigna Tech. Ltd. v. Nissan Motor Co.*, this Court noted that while "connected to" in isolation may include both direct and indirect connection, the electronic arts patent there required a direct connection: "In this context, interposed circuit elements could fundamentally change the characteristics of the circuit and potentially render it inoperable for its intended purpose." No. 2:22-CV-126, 2022 WL 1449701, at *4 (E.D. Tex. May 9, 2022). The same applies here.[5] The '305 patent consistently depicts the output of storage cells directly connected to an output driver, where stored voltages are sent to the driver without any intervening components. Conversely, as Dr. Silzars explained,[6] replacing analog cells with digital cells would require at least a digital-to-

[5] *See ICM Controls Corp. v. Honeywell Int'l, Inc*, 256 F. Supp. 3d 173, 184 (N.D.N.Y 2017) (distinguishing "coupled" from "connected"; where "connected" is used with…descriptions that do not…describe intervening circuitry, expansive reading "would dramatically expand the scope of the claims beyond the structure discussed in the specification"); *Pulse Eng'g, Inc. v. Mascon, Inc.*, No. 8-cv-595, 2009 WL 755321, at *3-4 (S.D. Cal. Mar. 9, 2009) (where patent uses "connected to" without intervening objects, POSA would recognize contemplated connection uses standard electrical conductors such as wire or solder and not additional electrical components like inductors or capacitors); *Mosaid Tech., Inc. v. Samsung Elec. Co.*, No. 01-CV-4340, 2004 U.S. Dist. LEXIS 27636, at *52 (D.N.J. Mar. 23, 2004) (construing "connected" to allow for limitless indirect connections would mean "every electrical component is connected to all the other components . . . no matter how many millions of intervening components there are.").

[6] As Dr. Silzars explained, the addition of any such bulky additional electronic components would be contrary to the objectives of the '305 patent to reduce the form factor, reduce costs, reduce power consumption, while maintaining precision. Ex. E ¶¶ 47, 146, 158. This is similar to *Power Integrations*, 884 F.3d at 1375-77, where the Federal Circuit reversed an "overly expansive" construction that allowed "coupled" components to simply be joined into a single circuit. This meant a digital-to-analog converter "coupled to" a counter could have a "bulky pre-programmed memory" between those components, contrary to the patent's focus on "minimizing circuit size" and expense, and the fact that every embodiment showed a direct connection between the digital-to-analog converter and the counter. Here, Phenix's treatment of "connected to" ignores the specification just as the *Power Integrations* plaintiff ignored the specification in construing "coupled to."

analog and analog-to-digital converters and other bulky structural components to be interposed between the drivers and storage cells. Ex. H at 80:1-81:3; Ex. D ¶ 29; Ex. I at 76:6-10.

Here, Phenix has presented no intrinsic or extrinsic evidence to support that "connected" and "coupled" should have the same meaning. *See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings."). Phenix points to claim 8, which recites "an output pin ***connected to*** an output ***through*** a second multiplexer," to suggest an indirect connection between an output pin and an output that goes through the second multiplexer. Br. 8 (emphases added). But in *Arigna* this Court rejected reliance on a similar statement describing "a control voltage [that] is ***connected to*** the positive electrode . . . ***via*** a resistor." *Arigna*, 2022 WL 1449701, at *4-5 ("[T]his example expressly references the interposed resistor in combination with using "connected to."). Claim 8 similarly supports Defendants' proposed constructions by expressly referencing the second multiplexer in combination with "connected to." Ex. I at 40:1-25, 42:15-19. If "connected to" were to encompass indirect connections, the term "through a second multiplexer" would be superfluous.

Phenix also suggests there is an embodiment of the '305 patent that "can include a display optimization algorithm non-physically connected to a monitor through a PC." Br. 9. But the cited passage actually says that the "[d]isplay optimization algorithms may be located in such a PC which also may be connected to monitors. . . ." '305 patent at 7:16-19. A POSA would understand this passage to indicate that the PC is connected to a monitor, for example through a VGA/HDMI cable (i.e., a direct connection). A POSA would not understand a display algorithm to be connected to a monitor via a PC. "Coupled to" thus has a broader meaning than "connected to."

### C. "multiplexer"

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| one or more circuits that selectively couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs) | one or more circuits, excluding an I2C serial bus, that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs) | one or more circuits that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs) |

There is no true dispute here. AUO proposes that "multiplexer" should "exclud[e] an I2C serial bus." And Phenix agrees. *See* Br. 11. While Phenix argues that negative limitations are disfavored, in every case it cites (*id.*), the parties were not in agreement, as they are here, that the negative limitation is indisputably true. Here, AUO's proposal can assist the jury in understanding the scope of the claims and should be adopted.

Further, the Court should deny Phenix's request to add "selectively" to its prior construction because it is redundant, would confuse the jury, and is based on an improper attempt to litigate a validity dispute through claim construction. Phenix offers no evidence or support why the Court should depart from its prior construction of "multiplexer" in *Wistron Corp.*, No. 2:17-CV-00711-RWS as "one or more circuits that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs)." Ex. A (*Wistron* CC Order) at AUO_0002971. Its only justification is a tactical concern arising from a now-denied IPR proceeding.

Indeed, the existing construction already captures the inherent function of selection. A circuit that "couples" one input to "one of many outputs" necessarily selects that output. Adding "selectively" is therefore redundant. *See Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 809-10 (Fed. Cir. 2021) (disfavoring constructions that render terms superfluous). It would also cause jury

confusion as to what the additional meaning of "selectively" is intended to convey and would improperly delegate a claim construction dispute to the jury. *See O2 Micro*, 521 F.3d at 1362. This danger is not merely theoretical. As Dr. Min explains, a POSA would likely interpret "selectively" as an attempt to import an undisclosed ***switchable*** characteristic—that is, the ability for the multiplexer to ***select its mode of operation*** (e.g., switching from many-to-one to one-to-many). Ex. D ¶¶ 67-69. Phenix's actual argument is different, but Dr. Min's reasonable confusion highlights the term's ambiguity. If a technical expert is confused, a lay jury will surely be misled.

Phenix's true motive is to preemptively defend against invalidity arguments from an IPR petition that it fears Innolux will raise in this litigation. Phenix is concerned a "serial interface" might be considered a "multiplexer" under the established construction, so it seeks to narrow the construction to exclude it, thus improperly litigating validity through claim construction. The Court's role is to determine what the claims mean, not to rewrite them to avoid invalidity over the prior art. *See Continental Circuits LLC v. Intel Corp.*, 915 F.3d 788, 797 (Fed. Cir. 2019).

Phenix's reliance on *TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180, 2014 WL 2810016 (E.D. Tex. June 20, 2014) is misplaced. There, the court refined a construction because the parties' agreement "masked real disagreement." *Id.* at *5. Here, any disagreement is not about the meaning of "multiplexer," but about its application to a "serial interface"—a question of fact for the jury. Moreover, Phenix's proposal does not even resolve that issue, as a reasonably jury could easily find that an appropriately configured serial interface satisfies Phenix's proposed construction. Phenix's construction would solely create more confusion. The proper course is to apply the established construction and let the jury decide its application to the facts.

**D. "bank(s)"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| plain and ordinary meaning | contiguous sections of addressable computer | N/A |

| | | |
|---|---|---|
| | memory arranged in n by m matrix format | |

Claim 1 of the '305 patent explicitly requires the non-volatile storage cells to be organized into "two or more banks of cells"—not just any type of organization. But Phenix now argues that "banks" should have an unspecified plain and ordinary meaning, rendering that term superfluous.[7]

Phenix should not be allowed to recapture a broader scope for the organization of non-volatile storage cells that it abandoned during prosecution. In prosecution, claim 1 was allowed only when the examiner added "wherein said non-volatile storage cells are organized into two or more banks of cells" after an examiner interview. Ex. J ('305 patent FH) at AUO_0000590. The notice of allowance specifically identified this limitation as a unique feature not disclosed in the prior art, including U.S. Patent No. 6,373,478 to Steffensmeier, which discloses an analog memory device with an unspecified organization. *Id.* Accordingly, "banks" should be distinguished from simply any random organization of non-volatile storage cells. *See Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1557 (Fed. Cir. 1995). Indeed, lay juries are unlikely to have an understanding of what a "bank" is and how computer memory may be organized.

AUO's construction is consistent with the *Wistron* IPR, where the Board rejected a plain and ordinary meaning and held that "banks of cells" needed a construction. The Board construed it to mean a "contiguous section[] of addressable computer memory" and cited the IEEE dictionary example of "eight memory devices, each of which is 64 kB by 1; forming a 64 kB X 8 memory bank," *i.e.,* a n by m matrix format. Ex. B (*Wistron* ID) at 14-15. AUO's construction uses the same dictionary support the Board relied on to capture the full understanding of the term as understood by a POSA. *Id.* at 14-15; Ex. C (IEEE Dictionary) at 3. Here, a POSA considering

[7] Where one defendant proposes a term and the other does not, no inference should be made that the defendants are in disagreement or that they support Phenix's proposal.

Figure 6 of the '305 patent would understand how memory cells are separated by banks and how it depicts non-volatile storage cells arranged in a matrix, with addresses for indexing (n) columns/rows of cells and (m) rows/columns of cells. '305 patent at Fig. 4A, 5:52-55. Giving "banks" an unspecified plain and ordinary meaning would render the term ambiguous and meaningless, allowing Phenix to map banks of cells on any type of memory structure. *See Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claims is preferred over one that does not do so.").

Phenix argues that "matrix" is not found in the specification (Br. 13) but cites no authority requiring every term from a construction to be recited in a specification. Phenix also relies on *Synqor, Inc. v. Cisco Sys., Inc*. (*id.* at 12) to argue that AUO seeks to reword the claim term, but *Synqor* faulted a construction that improperly reorganized the same words as used elsewhere in the claim. 2:11-CV-54, 2014 WL 1338712, at *11 (E.D. Tex. Jan. 2, 2014). AUO does not reorganize the words of the claim itself but gives meaning to those words. Finally, Phenix relies on *Dealertrack, Inc. v. Huber* to argue that it did not disclaim other arrangements of memory. Br. 13. But in *Dealertrack*, the court rejected defendant's attempt to introduce a negative limitation ("not including the internet") that was not supported by any disclaimer. 674 F.3d 1315, 1321 (Fed. Cir. 2012). AUO's construction is not a negative limitation but gives meaning to the term "banks" consistent with the specification, the Board's construction, the term's IEEE dictionary definition, and the understanding of a POSA.

**E. "external source for the high voltage programming means"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| plain and ordinary meaning | N/A | a voltage source for the high voltage programming means that is not inside or a part of the claimed integrated circuit. |

This term requires construction to prevent jury confusion and avoid indefiniteness.

Phenix's assertion that no construction is needed is incorrect because leaving the relational term "external" undefined will confuse the jury about what the "source for the high voltage programming means" is external ***to***.

Courts regularly define relational terms to provide an objective frame of reference. In *EVM Systems*, "distal end" was deemed clear because the claimed apparatus had "only two ends," providing an inherent boundary. *EVM Sys., LLC v. Rex Med., L.P.*, No. 6:13-cv-184, 2015 WL 4911090, at *5 (E.D. Tex. Aug. 17, 2015). Here, the '305 patent provides no such immediately obvious boundary for "external" in the claim language alone. In contrast, Innolux's construction, which is derived from the intrinsic evidence, would prevent jury confusion and ensure the claim is understood with the "reasonable certainty" the law requires. *Nautilus, Inc. v. Biosig Instr., Inc.*, 134 S. Ct. 2120, 2124 (2014).

The specification consistently and exclusively describes the high-voltage programming source as physically outside the IC and provides an objective boundary for "external." Ex. D ¶¶ 73, 79. The specification explicitly states, "Vpp is supplied from an external source, an IC or other means" ('305 patent, 6:30-32; Ex. D ¶¶ 74, 87), directly confirming the source is not part of the patented IC. The patent repeatedly describes the high-voltage Vpp as an "input" to the claimed integrated circuit (Ex. D ¶¶ 75-76; '305 patent, 6:25-30), and an input, by definition, comes from outside the component it enters. Figures 4A and 4B further depict "VPP" as a physical input pin on the IC package, showing the high voltage is delivered ***to*** the chip, not generated ***within*** it. Ex. D ¶¶ 76, 80-81; '305 patent, Figs. 4A-4B. Moreover, the patent discloses no on-chip high-voltage generation circuitry, such as a charge pump, which a POSA would know is required to create the necessary programming voltages internally. Ex. D. ¶¶ 77, 82. Innolux's construction is the only interpretation consistent with the patent's disclosure.

Dr. Min's testimony confirms that sourcing high programming voltages externally was standard industry practice for non-volatile memories at the time. *Id.* ¶¶ 84-85. Technical datasheets and contemporary patents describe the same architecture: a high-voltage Vpp supplied from an external programmer to a dedicated pin on the IC. *Id.* ¶¶ 86-91. A POSA would thus have understood "external source" to mean a source that is off-chip.

Innolux's construction provides the clear, unambiguous boundary (the claimed IC) that Phenix's "plain meaning" approach lacks. This construction is directly supported by explicit statements, figures, and the conspicuous absence of alternative disclosures in the specification, and it reflects the undisputed understanding of a POSA and standard industry practice. Therefore, the Court should adopt Innolux's construction for "external source for high voltage programming means" to ensure definiteness and proper claim scope.

## III. THE '788 PATENT

### A. "gamma reference control capability"

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| plain and ordinary meaning | Indefinite. Alternatively, to the extent the term is not indefinite, it should be construed as:<br>**Function:** programming and storing gamma reference voltage values in storage cells that are used to generate gamma reference voltage outputs and switching between different gamma settings to implement dynamic gamma correction<br>**Structure:** Fig. 2 (programming interface 230, gamma reference controller 210, and gamma reference controller 220) AND Fig. 3 (programming engine 310, Analog Input, R/W, MUX 320, A0, A1, A2, and floating gate memory cells 330-337) AND Fig. 5 (Tdamp) **OR**<br>Fig. 6 (programming interface, Vpp, MUX, A0, A1, Bank Select, B0, B1, B2, floating gate memory cells) AND Fig. 5 (Tdamp)<br>and equivalents thereof. | Indefinite under § 112. To the extent the term is not indefinite, it should be construed as: "a stand-alone, nonvolatile device that is electrically reprogrammable, the device including a programing interface and two gamma reference controllers physically connected to the programming interface, the two gamma reference controllers being physically connected to source drivers connected to a panel." |

Phenix agrees "gamma reference control capability" recites "functional language" (Br. 16)

but fails to identify any structure that provides the function of "gamma reference control capability" to the display of claim 1, confirming that the term is indefinite under § 112(f). Here, the term "capability" is a nonce word like "module" and "mechanism," and is thus a means-plus-function term. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1350 (Fed. Cir. 2015); Ex. D ¶ 93; Ex. E ¶ 115. *Williamson* sets forth a two-step test to determine whether a claim term should be construed as a "means-plus-function" limitation under § 112(f). *Id.* Step 1 asks whether a POSA would understand the ***claim*** to recite a sufficiently definite structure. If not, Step 2 asks whether the ***specification*** recites a structure that can save the term from indefiniteness.

Under *Williamson* Step 1, Phenix appears to suggest that the "gamma reference control capability" is merely ***associated with*** a display and never identifies the display ***as*** the structure that performs "gamma reference control." Br. 16. Claim 1 recites the step of "***providing*** the display with gamma reference control capability" but does not state that the display ***is*** the structure that has gamma reference control capability. Indeed, Phenix's expert did not even attempt to identify a structure in the claim that performs "gamma reference control."[8] Ex. F ¶¶ 33-35. And Drs. Silzars and Min agree that claim 1 recites no such structure. Ex. E ¶ 116; Ex. D ¶ 93; Ex. I at 66:11-16; Ex. H at 64:20-65:2.

Under *Williamson* Step 2, the specification fails to inform a POSA of any structure that constitutes a "gamma reference control capability" for performing the functions of programming and storing gamma reference voltage levels. Ex. E ¶¶ 119-31; Ex. D ¶¶ 92-100. For example, Dr. Min was unable to identify any such structure that performs the storage function of claim 1.

[8] Phenix conflates *Williamson* steps 1 and 2 by looking to the specification to see if it discloses a structure that overcomes the presumption against means-plus-function claiming. Br. 17. Indeed, Phenix's expert analyzes only the specification and not the claim for a structure that performs "gamma reference control." Ex. F ¶¶33-35.

Ex. D ¶¶ 95-96. Dr. Silzars also opined that the term "gamma reference control capability" would not be limited to memory and storage capabilities but would also require "control capability." Ex. E ¶¶ 120-21; Ex. H at 68:17-23. The specification, however, does not define what structure(s) would provide storage or the claimed "control capability." Ex. E ¶¶ 122-30. The '788 patent thus fails Step 2 because the specification must disclose a structure "adequate" to achieve the claimed function, not just a corresponding structure. *Williamson*, 792 F.3d at 1352.

Phenix argues that "gamma reference controllers" (a different structure than the display it identified in Step 1) are discussed in the specification but does not clearly link this structure (or any structure) to the functions performed by the "gamma reference control capability." *See, e.g.*, *NetSocket, Inc. v. Cisco Sys., Inc.*, No. 2:22-CV-172-JRG, 2024 WL 5454527, at *15, 20-21 (E.D. Tex. May 29, 2024) (finding indefinite terms where plaintiff fails to identify a structure that is "clearly link[ed]" to the claimed function). Indeed, Phenix concludes that a "gamma reference control capability" would refer to functional capability that can be incorporated into a display but never identifies the "gamma reference controllers" or any other component disclosed in the specification as the structure for a "gamma reference control capability." Br. 17. Phenix's expert fares no better. The single paragraph of analysis in his declaration merely discusses the "gamma reference controllers" but does not state that these controllers would meet the bounds of the structure for the term "gamma reference control capability." Ex. F ¶ 34. He does not even discuss the single function that claim 1 would require the gamma reference control capability to perform—storing gamma reference voltage levels—and whether that is performed by the "gamma reference controllers." *Id.* His opinion should be given no weight. Conversely, Drs. Silzars and Min analyzed the specification thoroughly to conclude that there is no recited structure for the "gamma reference

control capability." Ex. E ¶¶ 119-31; Ex. D ¶¶ 92-100. The term is indefinite.[9]

**B. "control circuit"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| plain and ordinary meaning | Indefinite. Alternatively, to the extent the term is not indefinite, the term should be construed as:<br>**Function:** varying gamma reference voltage levels on columns of a display<br>**Structure:** Fig. 2 (gamma reference controller 210 AND gamma reference controller 220) AND Fig. 3 (programming engine 310, Analog Input, R/W, MUX 320, A0, A1, A2, and drivers 340-347) OR Fig. 6 (programming interface, Vpp, MUX, A0, A1, Bank Select, B0, B1, B2, and drivers (not numbered)). | Indefinite under § 112. To the extent the term is not indefinite, the term should be construed as:<br>"a stand-alone integrated circuit attached to and separate from a liquid crystal display, the integrated circuit including a programing interface and two gamma reference controllers physically connected to the programming interface, the two gamma reference controllers being physically connected to source drivers connected to a panel of the liquid crystal display." |

The term "control circuit" is indefinite under 35 U.S.C. § 112 because the patent discloses no structure corresponding to the claimed function. Phenix's contention fails because the term "control circuit" is a purely functional description that does not connote sufficient structure to a POSA. Claim 1 of the '788 patent recites a method step of "***varying gamma reference voltage levels on columns of said display*** by a control circuit, wherein said control circuit is separate from said display." '788 patent, 7:32-35 (emphasis added). This is a purely functional description, stating what the "control circuit" ***does***, not what it ***is***. Ex. D ¶¶ 102, 104; Ex, E ¶ 74; Ex. H at 51:13-21; Ex. I at 70:13-15. While "circuit" can sometimes connote structure, its use here with the generic, functional modifier "control" renders the term a nonce word, a mere black box for performing a recited function. "Module" is a well-known nonce word that can substitute for "means" and trigger § 112(f) analysis, and generic terms like "mechanism," "element," and

[9] Should the Court find "gamma reference control capability" is not indefinite but is a means-plus-function term, AUO's alternative proposal should be adopted. Should the Court find the term is not a means-plus-function term, Innolux's construction should be adopted. Ex. D ¶ 100.

"device" reflect nothing more than verbal constructs. *Williamson*, 792 F.3d at 1349-50. "Control circuit" similarly acts as a nonce word here.

The specification provides no help. The term "control circuit" never appears in the specification of the '788 patent. Ex. D ¶¶ 101, 107. A POSA is given no guidance as to what specific components or arrangement of components constitute the claimed "control circuit." *Id.* ¶¶ 107-08; Ex. E ¶ 76. The patent describes a "programming interface" (230) and "gamma reference controllers" (210, 220), but these are for programming and storing voltages, not for performing the separate, claimed function of "varying" the voltages on the display columns. Without any disclosed structure, the bounds of the claim are impossible to determine. Ex. D ¶¶ 101, 108; Ex. E ¶¶ 80-81. Functional descriptors like "control" cannot provide the necessary structure, as they merely describe what the component does, not how it does it. *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1382-83 (Fed. Cir. 2009).

Phenix's reliance on *Apex* and *MIT* is unavailing. *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364 (Fed. Cir. 2003); *MIT. v. Abacus Software*, 462 F.3d 1344 (Fed. Cir. 2006). In those cases, "circuit" was accompanied by a more descriptive, structural modifier or was used in a specification that provided context and examples giving the term structural meaning. *Apex*, 325 F.3d at 1373; *MIT*, 462 F.3d at 1356. Here, "control" is purely functional. The claim language stating the circuit is "separate from said display" is also insufficient to cure the indefiniteness; knowing ***where*** a black box is not located does not inform a POSA as to ***what*** the black box is.

The Federal Circuit has repeatedly refused to follow *Apex* and *MIT* when functional modifiers negate any structural connotation. For example, in *Ergo Licensing*, the court found "control means" and "programmable control means" indefinite because the specification's reference to a "control device" provided no more structure than the claim terms themselves,

explicitly distinguishing *Apex. Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1363 (Fed. Cir. 2012). *Williamson* further established that nonce words like "module" lack inherent structural meaning, and functional modifiers cannot cure this lack. 792 F.3d at 1349-50. In *Rain Computing v. Samsung Elec. Co.*, the court reinforced that functional modifiers do not impart structure to nonce words, and the specification itself must provide the structural disclosure. 989 F.3d 1002, 1007-08 (Fed. Cir. 2021). Phenix's argument that a POSA would understand the term is conclusory. Ex. D ¶ 108. It is not enough for the patentee to simply state or later argue that a POSA would know what structures to use. *Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). Without a single mention in the specification or a clear structural link to the claimed function, a POSA would be forced to guess the scope of the claim, which is the hallmark of indefiniteness.

The term "control circuit" is indefinite because it is a purely functional abstraction with no corresponding structure disclosed in the patent. The Court should find the term indefinite.[10]

**C. "means for executing a predetermined algorithm"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| Function: executing a predetermined algorithm. Structure: programming interface such as Fig. 2 (programming interface 230), Fig. 6 (programming interface), 6:1-14, or 6:57-64 (PC based programming interface) and equivalents thereof. | N/A | Indefinite under § 112. The term "predetermined algorithm" is also indefinite as discussed *infra* at Section III.E. |

This term is an indefinite means-plus-function limitation because the '788 patent fails to disclose ***any*** corresponding algorithm that can perform the required functions of the claim.

For a computer-implemented function like "executing a predetermined algorithm" to

[10] Should the Court find "control circuit" is not indefinite (it is) but is a means-plus-function term, AUO's alternative proposal should be adopted. Should the Court find the term is not a means-plus-function term, Innolux's construction should be adopted. Ex. D ¶ 109.

perform recited functions, the corresponding structure cannot be a general-purpose computer or processor; the specification must "disclose an algorithm for performing the claimed function," which "algorithm may be expressed as a mathematical formula, in prose, or as a flow chart." *Williamson*, 792 F.3d at 1352-54; *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999) (the corresponding structure cannot be a general purpose processor, but "the special purpose computer programmed to perform the disclosed algorithm"). Merely stating that an algorithm exists, or that it is "predetermined," is insufficient. *Aristocrat Tech..*, 521 F.3d at 1333-35. "[W]here a disclosed algorithm supports some, but not all, of the functions associated with a means-plus-function limitation, we treat the specification as if no algorithm has been disclosed at all." *Noah Systems, Inc. v. Intuit Inc.*, 675 F.3d 1302, 1318-19 (Fed. Cir. 2012).

For example, in *Function Media, LLC v. Google Inc.*, the Federal Circuit found claims indefinite where the specification disclosed software as the "means for transmitting" but provided no algorithm for preforming the recited function, making the software "a black box that accomplishes the claimed function." 708 F.3d 1310, 1318-19 (Fed. Cir. 2013). "[I]t is well established that proving that a [POSA] could devise some method to perform the function is not the proper inquiry as to definiteness—that inquiry goes to enablement." *Id.* at 1319. Similarly, in *Rain Computing*, the Federal Circuit held that where a processor or another device requires some form of programming to perform the recited function, failing to disclose the specifics of an algorithm to perform the function renders the claims indefinite. 989 F.3d at 1007-08.

The complete absence in the specification of an algorithm for performing the recited functions renders claim 1 indefinite. The relevant limitation of claim 1 states, "optimizing said gamma reference voltage levels using *means for executing a predetermined algorithm* according to a predetermined criteria and data sensed by said at least one sensor." Accordingly, the function

is not just "executing a predetermined algorithm," as Phenix asserts, such that executing any predetermined algorithm of any kind would satisfy the claim. "Executing a predetermined algorithm" requires a processor executing a program (software), and the program must perform the functions of (1) "optimizing said gamma reference voltage levels," (2) "according to a predetermined criteria" and (3) "according to … data sensed by said at least one sensor." No such algorithm is disclosed in the '788 patent, nor does Phenix or its expert identify one.

The specification of the '788 patent mentions "algorithm" only once, and it merely states, "display optimization algorithms may be located in such a PC" ('788 patent, 6:61-62), without disclosing the algorithm itself, *i.e.*, the steps of the algorithm that perform the optimization. This is a classic black box, the epitome of what the Federal Circuit has consistently found indefinite. Ex. D ¶¶ 115, 119-24. Phenix's expert likewise acknowledges that the "predetermined algorithm" of the claim "comprises a pre-set or pre-conceived order of steps to optimize or adjust the gamma reference voltage levels" but never identifies the steps that comprise such an algorithm, in the specification or otherwise. Ex. F ¶ 49; *see generally* ¶ 39-50. Phenix's expert only cites to the specification's non-disclosed "[d]isplay optimization algorithms" that may be stored and executed in a separate PC. *Id.* ¶ 49. Because the '788 patent provides no algorithm that performs the functions required by the claim, the limitation is indefinite and the claim is invalid.

In a recent *inter partes* review,[11] the Patent Trial and Appeal Board ("PTAB") confirmed the above points by holding that (1) the "means for executing" term is a means-plus-function term that "should be construed to cover the corresponding structure described in the specification"

[11] Because there is no corresponding algorithm in the specification, Innolux argued in the IPR that the "means for executing" term in claim 1 was not MPF, and if corresponding structure was required, it would be a general-purpose processor, or alternatively, a programming interface. The PTAB rejected these positions, as explained above. Defendants have aligned their current claim construction positions with the holdings of the PTAB.

pursuant to §112 ¶6, (2) "for a computer implemented means-plus function term the corresponding structure must be the specific algorithm implemented by the processor," and (3) identifying a "programming interface which executes an optimization algorithm" as the corresponding structure is insufficient "without also identifying an algorithm for providing the claimed function of executing one or more optimization criteria algorithms based on optical emission corresponding to said selected columns." Ex. G (*Innolux* ID) at 16-22.[12] Since this MPF term could not be construed in the absence of a corresponding algorithm in the specification—and neither the Patent Owner (Phenix) or the Petitioner (Innolux) was able to identify a corresponding algorithm—the PTAB had no alternative but to deny institution, because the PTAB could not construe the claim without a corresponding algorithm and indefiniteness cannot be decided in an IPR. *Id.* at 23. But the specific findings of the PTAB can lead to no conclusion other than indefiniteness, and a different conclusion by this Court would be irreconcilable with the PTAB's institution decision.

Phenix's proposed construction not only fails to identify any corresponding algorithm, but it is flawed for an additional reason. Phenix identifies the "programming interface" as the corresponding structure, but as the PTAB held, this is insufficient "without also identifying an algorithm for providing the claimed function of executing one or more optimization criteria algorithms based on optical emission corresponding to said selected columns." *Id.* at 22-23; Ex. D ¶¶ 116-18. Moreover, a "programming interface" is incapable of executing any type of computer program or algorithm. The programming interface is merely a conduit for data—a collection of

[12] The PTAB addressed "means for executing" terms in both claims 1 and 3, both of which recite a "means for executing" an "algorithm" or "algorithms." The PTAB stated that its reasoning for the "means for executing one or more optimization criteria algorithms" in claim 3 was equally applicable to the term "means for executing a predetermined algorithm" in claim 1 and vice versa. As the PTAB expressly stated, it discerned "no meaningful distinction" in the legal analysis for the two "means for executing" terms in claims 1 and 3. Ex. G at 21.

inputs and control signals for writing voltage values to memory cells. It is not a computational engine that ***executes an algorithm,*** much less the optimization criteria algorithms required by the claim. Ex. D ¶¶ 117-18. The programming interface merely receives values, *e.g.*, from the separate PC referenced in the specification that executes an algorithm, and stores the values to memory. *Id.*

The '788 patent is consistent, disclosing that the "programming interface ***allows*** the device to be programmed in-situ thus ***providing the ability*** to individually ***program*** or adjust the gamma reference voltages for an individual display," '788 patent at 6:1-64 (emphasis added). The claimed device "incorporates a programming interface ***to allow the programming*** of the buffer outputs to the desired values." *Id.* at Abstract; 2:23-26 (emphasis added). But the "programming interface" itself is incapable of any programming (*i.e.,* executing an algorithm), which is why the patent ***also*** discloses a "PC programming interface" in an attached PC and discloses that the "optimization algorithms may be located in such a PC." *Id.* at 6:58-64. The "programming interface" is simply that: an ***interface*** between the claimed IC and another IC or computer that is performing the programming, *i.e.,* executing the optimization algorithm. Phenix conflates the means for ***inputting*** the results of executing an optimization algorithm (*see, e.g.,* '788 patent at 6:15-31, which describes how the programming interface stores the resulting values in memory) with the means for ***performing*** or **"*executing*"** the optimization algorithm itself, which optimizes the gamma reference voltage levels "according to a predetermined criteria and data sensed by at least one sensor." Accordingly, Phenix's construction must be rejected because it (1) fails to disclose the required algorithm, and (2) points to a structure that cannot perform the recited function.[13]

**D. "means for executing a predetermined algorithm according to a**

[13] Even if a "programming interface" were capable of executing a predetermined algorithm (and it is not), like a general purpose computer or processor, the "programming interface" would be insufficient structure under the same Federal Circuit precedent discussed *supra* because there is no corresponding algorithm in the specification.

**predetermined criteria and data sensed by said at least one sensor / means for executing said predetermined algorithm"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| Subject to Plaintiff's Proposed construction of Term 10, any additional language of Term 11 should be given its plain and ordinary meaning. | Indefinite. | Indefinite under § 112. The term "predetermined algorithm" is also indefinite as discussed *infra* at Section III.E. The rest of the clause should be given its plain and ordinary meaning. |

Phenix argues the additional language in this longer term—"according to a predetermined criteria and data sensed by said at least one sensor"—should be given its plain and ordinary meaning. This position fails because it is part of a limitation that is indefinite, for the same reasons articulated in the preceding section. The patent's failure to disclose the corresponding algorithm (or any algorithm) is a fundamental defect that this additional language does not cure.

The added language in the clause "executing a predetermined algorithm ***according to a predetermined criteria and data sensed by said at least one sensor***" exacerbates the indefiniteness. It adds further functional requirements to the undisclosed algorithm, telling a POSA what the algorithm must ***do*** (i.e., use sensor data and criteria as inputs) but providing no detail on ***what the algorithm is***. Ex. D ¶ 122; Ex. E ¶¶ 96-107. This only makes the scope of the claim less certain, as it describes a more specific function for a black box whose internal workings remain a complete mystery. For the reasons detailed above, and because this additional language only deepens the uncertainty, the Court should find this term indefinite.

**E. "predetermined algorithm"**

| Plaintiff's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| Plain and ordinary meaning | Indefinite. | Indefinite under 35 U.S.C. § 112 |

Phenix argues "predetermined algorithm" is a simple, commonly understood term that should be given its plain and ordinary meaning. This position fails because the term is inextricably linked to the "means for executing…" limitation and suffers from the same fundamental flaw

discussed above: the patent never discloses an algorithm that performs the functions of the claim.

As established in the argument for "means for executing a predetermined algorithm," the law requires the patent to disclose the specific steps of a claimed algorithm. That analysis applies with equal force here. A patent cannot claim a set of rules without actually disclosing what those rules are. The term "predetermined algorithm" is a placeholder for an invention the patentee never actually disclosed. Because the specification provides no rules, no steps, and no procedure, a POSA cannot determine the scope of the claim with reasonable certainty Ex.D ¶¶ 119-24; Ex. E ¶¶ 134-42. Phenix's expert likewise acknowledges that the "predetermined algorithm" of the claim "comprises a pre-set or pre-conceived order of steps to optimize or adjust the gamma reference voltage levels" but never identifies where in the specification the steps of an optimization algorithm are disclosed, because none exist. Ex. F ¶ 49. Nor does Phenix's expert describe what the steps of an optimization algorithm would be. *Id.* ¶¶ 39-50.

As discussed *supra* at Section III.C, a computer-implemented function in a means-plus-function claim must have as its corresponding structure an algorithm disclosed in the patent specification. In addition, when the term "algorithm" is used in a patent claim, it is indefinite absent a disclosure of the algorithm in the specification. For example, in *Kaavo Inc. v. Amazon.com Inc.*, a claim that used the term "needs analysis algorithm" was found indefinite because even though the patent specification twice referred to a "needs analysis algorithm," the specification never disclosed any specific algorithm. No. 14-353, 2018 WL 3025040, at *3 (D. Del. June 18, 2018). "Without such guidance, a POSA would not know which of several different algorithms, each producing different results, could be used" to perform the required functions. *Id.*

As in *Kaavo,* the '788 patent refers to the existence of "optimization algorithms" but never discloses any such algorithm, providing a POSA with no guidance as to what optimization

algorithm should be executed. "A POSA would recognize that numerous different algorithms could potentially be used, involving various mathematical approaches (like curve fitting, iterative adjustments, or lookup table modifications) and different ways of interpreting sensor data or applying data." Ex. D ¶122. "Without disclosure of the specific algorithm chosen and claimed by the patentee, a POSA has no way to know which specific optimization method falls within the scope of the claim," which is compounded by the failure of the patent to define the "predetermined criteria" recited in the claim. *Id.* The patent's failure to disclose the algorithm renders the term "predetermined algorithm" itself indefinite, in addition to the "means for executing" term being indefinite for the lack of corresponding structure as required by Federal Circuit precedent governing means-plus-function terms.

**F. "optimizing said gamma reference voltage levels"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| plain and ordinary meaning | N/A | Indefinite under 35 U.S.C. § 112 |

The term "optimizing said gamma reference voltage levels" is indefinite under § 112 because it is a subjective term of degree lacking objective standards, and the patent provides no guidance on what constitutes an "optimized" state, leaving the claim's scope unascertainable. Ex. D ¶¶ 125, 128-29. Patent claims must inform skilled artisans about their scope with "reasonable certainty." *Nautilus*, 134 S. Ct. at 2124. Terms of degree fail this test when they depend on subjective judgment without objective boundaries.

*Intellectual Ventures* directly held claims requiring "optimizing" Quality of Service (QoS) indefinite because optimization depended on subjective user preferences. *Intellectual Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372, 1379 (Fed. Cir. 2018). The court found "QoS requirements" "entirely subjective and user-defined," dependent on "the unpredictable vagaries of any one person's opinion." *Id.* Similarly, gamma voltage optimization depends on subjective visual

preferences, display conditions, and user perception without objective measurement criteria. Ex. D ¶¶ 125-29. The claim's goal, "to achieve the desired gamma curve," is itself subjective, as the specification admits it depends on "user or application requirements." '788 patent at Abstract, 2:26-28; Ex. D ¶¶ 126, 128. The patent provides no objective, measurable criteria—no tolerance ranges, numerical thresholds, or definition of how close the resulting curve must be to the "desired" curve to be considered "optimized." Ex. D ¶ 128.

This aligns with other cases that have held subjective terms of degree to be indefinite. In *Interval Licensing*, "unobtrusive manner" was found indefinite due to its subjective nature and the lack of guidance from the patent specification. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). Similarly, *Datamize* found "aesthetically pleasing" indefinite due to its complete dependence on subjective opinion. *Datamize LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2005). Like these terms, "optimizing" gamma voltages depends on subjective visual perception and user preferences without objective boundaries. A competitor cannot know if their process, producing a good gamma curve, is sufficiently "optimized" to infringe. The '788 patent provides no such objective, measurable standard for "optimizing."

Phenix relies on the specification's references to achieving "desired values." But this language merely restates the subjective nature of the goal. A "desired" value is inherently subjective. The specification describes ***that*** optimization should occur but provides no objective guidance as to ***when*** that optimization has been achieved. Ex. D ¶ 128. It describes a goal, not a standard. Expert testimony cannot cure missing objective standards in the specification; intrinsic evidence must provide guidance. *Teva Pharm. USA Inc. v. Sandoz Inc.*, 789 F.3d 1335, 1344 (Fed. Cir. 2015). Furthermore, similar to *Dow Chemical*, where multiple measurement methods existed without guidance, gamma optimization could involve multiple parameters (contrast, brightness,

color accuracy) without guidance on which to prioritize or how to measure the "optimized" state. *Dow Chem. Co. v. Nova Chem. Corp.*, 803 F.3d 620, 629 (Fed. Cir. 2015).

Accordingly, the term "optimizing" renders the claim indefinite because it fails to provide a POSA with any objective, measurable standard to determine what falls within the scope of the claim. The Court should therefore find the claim reciting this term to be invalid.

**G. "gamma reference voltage levels"**

| Phenix's Proposal | AUO's Proposal | Innolux's Proposal |
|---|---|---|
| plain and ordinary meaning | An analog voltage(s) stored in an analog storage cell | Analog voltage(s) stored in an analog storage cell(s) |

The Court should construe "gamma reference voltage levels" as "analog voltage(s) stored in an analog storage cell(s)." This term, which was not construed in the *Wistron* case, raises additional reasons why these voltages cannot be digital. 2:17-cv-711, Dkt. 247 (E.D. Tex. June 21, 2019). The Court should reject Phenix's attempt to expand the claims beyond the invention's scope by proposing an unspecified plain and ordinary meaning. Here, every embodiment of the '788 patent discloses a flow path of analog voltages that are used to adjust the gamma voltages for an LCD panel. *See* Ex. H at 75:10-76:14 (explaining that a purely analog flow path is consistent with POSA's understanding, as voltage levels "would typically be expressed as an analog" voltage because "[t]he columns on the display work on the basis of an analog signal always"). While Dr. Min states that voltage levels ***can*** be stored as digital data, it is "not as recited in this claim 1," and "whatever is applied on the columns of a display panel" must be "the analog value." Ex. I at 75:7-11, 75:22-25; *see also id.* at 74:17-20 ("[T]hat voltage level has to have an analog voltage in order to vary right there, and that cannot come from a digital nonvolatile storage cell."). The '788 patent confirms this understanding, describing storage and application of analog voltages in analog memory cells. '788 patent at 5:37-45, 6:4-9, 6:36-44.

Phenix fails to identify any disclosure supporting that the inventors possessed anything beyond analog "gamma reference voltage levels."[14] Instead, Phenix relies on a disclosure that supports Defendants' proposed construction: the patent discloses that display manufacturers must "generate specific gamma reference voltages for each model of display," requiring precise and custom analog voltage generation tailored to each display. '788 patent at 1:26-27. Such modulated gamma reference voltage levels (*id*. at 7:1-5) cannot be produced by a digital voltage because they require actual analog voltages stored in analog memory to directly drive the columns of a display panel. As Dr. Silzars explained, digital data "could only turn the display fully on or fully off" and "cannot represent gray scale," which is essential for "modulated" display operations, and thus are "not the intent of the invention." Ex. H at 80:4-81:3. Phenix also relies on *Dealertrack*, but *Dealertrack* involved a dispute over the inclusion of a negative limitation. *Dealertrack*, 674 F.3d at 1321. Defendants' construction does not introduce a negative limitation and is not based simply on a POSA's view of the patent. Instead, it captures the focus and scope of the invention as a whole, as reflected in how the specification consistently characterizes gamma reference voltage levels as analog voltages. Defendants' construction should be adopted.

## IV. CONCLUSION

Defendants respectfully request that the Court adopt Defendants' proposed constructions.

[14] Phenix argues that Drs. Silzars and Min do not dispute that "gamma reference voltage levels" may comprise digital and analog forms (Br. 27), but Phenix's citations do not support this position. Instead, both experts unequivocally conclude that "gamma reference voltage levels" are only represented by analog voltages in the '788 patent.

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**CERTIFICATE OF SERVICE**

The undersigned certifies that on July 15, 2025, a copy of the foregoing document was filed electronically in compliance with Local Rule CV-5(a). Therefore, this document was served on all counsel who are deemed to have consented to electronic service.

By: *Melissa R. Smith*